assumed by every individual who takes up the scalpel as a means of livelihood.

I regret to say that some of the gentlemen whose asepsis in the operating room has been open to serious criticism, have been recent graduates whose teaching, I am positive, has been forgotten or never understood. Recent graduates of recognized medical colleges should have, theoretically, an almost perfect aseptic technic. Any individual who has had the advantages of a course in a modern bacteriological laboratory cannot but appreciate the serious results which are liable to follow the slightest error in asepsis. Why is it, then, that these recent graduates forget their teaching? Simply from lack of having acquired the "aseptic habit." Unless a person be in constant touch with operating room work, he is liable to become careless and endanger the lives of patients who have the misfortune to be operated upon with his assistance.

No individual should attempt to operate who does not keep in constant training, either as an operator or an assistant, because his results will be bad, and he will bring legitimate surgery into disrepute.

Stitch-hole abscesses are usually caused by the poor technic of the operator or his assistants.

EXTRA-UTERINE PREGNANCY. *

By R. A. WHIFFEN, M. D., San Jose.

MY INCENTIVE to bring the subject of extra-uterine pregnancy before the society for discussion was originally a difference of opinion between Dr. Howard Gates and myself in regard to a patient on whom we operated at the County Infirmary.

Since I have had the pleasure of assisting Dr. Gates at an operation upon a case of tubal pregnancy at the San Jose Sanitarium, a description of which I will give you.

Extra-uterine pregnancy dates back in surgical history to the eleventh century in all probability, and from that time down to the present cases have been reported at intervals of from two hundred years to a few days.

What interests us more than history is the present knowledge of this development of the fertilized ovum outside of the uterine cavity, and of this knowledge I shall make as brief a statement as possible.

Many theories are advanced as to the cause of this condition, the most feasible ones being: polypi in the Fallopian tube; atresia of one tube with external migration of the fertilized ovum or the spermatozoa from the opposite side; persistence of a foetal type of uterine tube; diverticula from the lumen of the tube; torsion of the tube; catarrhal and purulent salpingitis; myoma of the uterus or in the tubal walls; peritoneal bands and adhesions compressing the tube; cervico-abdominal fistula after hysterectomy; any one of which may be a cause in some particular case.

With these various causes it can readily be understood that the ovum may develop in a number of locations as the following classification will show: First, ovarian pregnancy, divided into internal when the ovum remains in the Graffian follicle and external when the ovum develops partly in the follicle and partly in the peritoneal cavity. Edgar states that this occurs in 4.8 per cent of all cases, while other authors—Williams, for instance—consider that it occurs less frequently. Second, abdominal or peritoneal pregnancy, divided into primary, in which the ovum falls into Douglas cul-de-sac and stays fixed there from the beginning; secondary, when the ovum begins its growth in the tube or ovary and by aborting from the tube or rupture of the tube or ovarian sac, the placenta still being retained in position wholly or partially, finally falls into the peritoneal cavity, where it continues its growth. Edgar states that this form occurs in 8.5 per cent of all cases. Other authors dispute the existence of a primary abdominal pregnancy, claiming that all abdominal cases can be proved to be secondary. Third, tubal pregnancy, divided into tubo-abdominal, in which the ovum increases partly in the tube and partly in the abdominal cavity; tubo-ovarian, in which the ovum is between the fimbriated end of the tube and the ovary; tubal pregnancy proper, in which the ovum is fixed about the middle of the tube; interstitial tubal pregnancy, in which the ovum is developed in that part of the tube which is connected with the uterine wall. This third class is by far the most common form, and Edgar states occurs in 86.7 per cent of all cases.

A little thought regarding the above classification, taking into consideration the anatomy of the parts involved, will be explanatory in itself.

We are most interested in the complications which arise, as they are really what do the damage to the patient.

The most important complications are a rupture of the tube from which the foetus may be expelled into the abdominal cavity, and if the placenta is still retained in its original site the foetus may continue to develop. The same thing may practically occur by the end of the tube being forced open and the foetus expelled, this latter being called tubal abortion. There might not be much hemorrhage in the above-mentioned condition, but the shock would be great. If, however, the placenta loosens partly or wholly (which is most apt to occur), there would be severe hemorrhage and in all probability collapse and possibly death of the woman in a very short time. If the woman does not die and an operation is performed at this time, the chances of recovery may be very good, but if nothing is done and the woman lives we will have an accumulation of clotted blood in the pelvis or between the layers of the broad ligament, forming a hematocele which may partly absorb, but there is always the possibility of infection in such a case, especially if the hematocele is in contact with the bowels, and then the dangers of pelvic abscess would be added.

Another condition that might develop is that the fetus and blood clots or the sac containing the foetus and placenta might be walled off in the abdominal cavity in contact with the bowels and by pressure on the bowels cause a necrosis at some point and rupture into the bowel, thereby creating another condition that is apt to prove fatal on account of hemorrhage into the bowel.

Very rarely the rupture of one of these pregnancies has been through the abdominal wall or into the bladder.

The one form of rupture of an extra-uterine pregnancy that does not cause trouble is the interstitial tubal pregnancy when it ruptures into the uterus.

The worst complication, in all probability, as far as the surgeon is concerned, is to be found when the growth has continued for several months before coming to operation and a great many adhesions have formed involving the bowels in the general mass, so that its removal is almost impossible on account of hemorrhage from large adherent surfaces.

In cases that have lived and never come to operation and in some that have gone to full term the records show that some of the foeti have become lithopoedians, remaining in the abdomen as long as fifty-five years; others have become encysted, and still others have formed abscesses which have been drained and the patients seemed to get along all right; still the dangers and suffering that attend such cases are uncalled for and should be avoided. It is only in the last twenty to twenty-five years that these cases have been treated surgically and in that time the mortality has been cut down enormously, so that at the present day treatment, such as electricity or the injection of poisonous fluids, to kill the foetus should absolutely be a thing of the past, and the surgeon called upon to operate as soon as a diagnosis is made. It is seldom that a diagnosis is made until the patient is in a bad state, as the woman herself does not realize her serious condition, and if she has

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had a physician he is not often looking for such trouble, as the symptoms before a rupture of the tube or sac occurs are not serious enough to make him suspect the nature of her trouble.

The symptoms on which to make an early diagnosis are at times rather indefinite. The woman may have all the symptoms of a normal pregnancy at first—vomiting, suppression of menses, change in breasts, increase in size of abdomen; added to this, dizziness or faintness. After the first six to eight weeks she is apt to have a bloody discharge or a decided hemorrhage from the uterus, due in some cases to the loosening of a decidual membrane which has formed in the uterus. This membrane may be thrown off in pieces and cause irregular hemorrhages or there may be a discharge stained with blood which the woman will consider irregular menstruation. As the growth increases in size there will be sharp pains in the side on which the growth occurs. If a bi-manual examination of the pelvis be made at this time an enlarged tube or ovary may be outlined or only a boggy mass at the side of the uterus or in the posterior cul-de-sac, the uterus itself being enlarged and the arteries in the pelvis pulsating strongly. If at this time pieces of decidual membrane can be demonstrated in the discharge from the uterus, an absolute diagnosis can be made.

If the patient goes on until rupture of the tube or sac and has symptoms of intra-abdominal hemorrhage, this, coupled with irregular flowing, severe pain in one side and perhaps the palpation of a mass of some kind in the pelvis, ought to lead to a diagnosis.

Cases have occurred, though very rarely, where there was a suppression of menses and no hemorrhage, but with the other symptoms present there should be no doubt of the diagnosis. The treatment of these cases should always be surgical, and if operated upon early an abdominal operation should be done and the entire mass removed; in fact, the abdominal operation will be the one of choice in most cases. There may be cases where a large mass bulges down into the vagina and an opening there, with removal of as much as possible of the mass would be advisable, packing the cavity to prevent hemorrhage and waiting for the mass to be gradually expelled through the opening or absorbed, but in this way it takes much longer for the patient to recover.

It may be necessary sometimes when doing an abdominal operation, if it is impossible to remove everything, especially the placenta, on account of hemorrhage, to pack through the abdominal opening and wait for the gradual separation of the placenta.

The first case I will report is that of Mrs. N., a French woman, 33 years of age, strong and healthy, except for a complete tear of the perineum and a prolapse of the uterus. She is the mother of eight children, one of these children dying at two years of age. At one birth a craniotomy was performed in order to deliver her. I waited upon her at her last confinement, on March 16, 1904, which was a normal birth. She has had one miscarriage, the first time she was pregnant. Since her last childbirth I examined her two times up to three months ago to determine what could be done with the prolapsed uterus. At these examinations I found nothing wrong with the ovaries or fallopian tubes. She nursed her last baby, but flowed irregularly during the nursing period. About three months ago she began to flow more often than she had before and from that time until within two weeks of the time she was operated upon flowed on an average of every two weeks, and the last two weeks she flowed most of the time. The flow at times being light colored and again she would have severe hemorrhages; she also complained of sharp pains in her left side and at times had regular contractions of the uterus, as she expressed it, like labor pains, flowing severely while the pains continued.

I examined her three times during the last two weeks, the first two times finding the uterus enlarged and made up my mind she was pregnant and was going to have a miscarriage, but the last time I examined her she was flowing severely and I could feel a boggy mass at the left and behind the enlarged uterus, the blood vessels in the pelvis pulsating strongly, and I decided it was a case of extra-uterine pregnancy. I then called in Dr. W. K. Davis to examine her, and he confirmed my diagnosis. She was taken to the Infirmary that night and Dr. Howard Gates and I operated upon her the next morning. We found an encysted mass behind and to the left of the uterus, somewhat adherent, but the adhesions were easily broken and the mass raised. We found it involved the ovary of the left side, the tube being perfectly normal. We removed the mass and upon opening it found the sac filled with clotted blood. The sac was perfectly smooth inside for about three-quarters of its surface, the other one-quarter having the clotted blood adherent to it. This sac was about 2½ inches in diameter. Dr. Gates curretted the uterus, but found nothing.

Dr. Gates is of the opinion that it was not an ovarian pregnancy, while I think it may possibly have been, as the growth corresponds in many ways with the requirements of Spiegelberg, who, to prove that condition, lays down these rules: First, the tumor must correspond to the situation of the ovary. Second, it must be connected to the uterus by the ovarian ligament. Third, the tube must be proved intact. Fourth, ovarian tissue must be found in the mass of the sac.

All except the fourth condition were proven, but unfortunately the specimen was thrown out and we were unable to prove the fourth. It seems to me, with all the symptoms of an extra-uterine pregnancy except the proof of ovarian tissue in the wall of the sac, that I am warranted in making my diagnosis of a probable extra-uterine ovarian pregnancy.

Through the kindness of Dr. Gates I am able to report a case about which there is no question.

This patient was first seen by Dr. Gates on June 29th. She was a well developed woman, strong and healthy in every way, 38 years of age and the mother of one child. She had a miscarriage two years ago, at which time she was curretted.

When first seen she was having a few cramps and flowing a little. She had missed one menstrual period. Bi-manual examination showed no enlargement of the uterus and no growth was determined at the side of the uterus. A little medicine relieved her of the cramps, and when Dr. Gates left town four days afterward she was feeling all right. While he was away the cramps and flowing returned and another physician was called in, who did not make a diagnosis. On July 13th Dr. Gates was called again and found the woman in a state of collapse, having severe cramps and almost exsanguinated from loss of blood; he made a vaginal examination and found a large boggy mass in the pelvis, making his diagnosis at once of ruptured extra uterine pregnancy, with intra-abdominal hemorrhage. The woman was moved at once to the San Jose Sanitarium and operated upon within an hour. On opening down upon the peritoneum the blood in the abdominal cavity showed dark through it and when the peritoneum was incised the blood spurted out all over the abdomen. The doctor removed a large amount of clots and free blood from the abdomen, then elevated the tube, which was quite large and showed that a tubal abortion had taken place. The abdomen was freed from blood as much as possible and washed out with normal saline solution; the tube was then removed, leaving the ovary which was not damaged, and the abdomen closed. A saline infusion was given the patient and such other stimulants as were deemed necessary; she rallied nicely and seemed to do well until the night of the 15th, when she suddenly grew worse and died on the 16th.

This specimen I have described is the tube with the fimbriated extremity filled with blood clots, and is the point from which all the hemorrhage took place.

The Mission and Function of the Local Medical Journal.

Where there are a number of rival medical journals in the same State, it is the duty of each physician to ascertain the best one, usually an easy task, and give that one his earnest support. In return for this support what does the medical journal owe to its subscribers? It owes them the prompt publication of all medical society reports and notices whenever such are furnished in proper season by the secretaries of these societies; and here let me say, in passing, that these societies should insist upon their secretaries sending reports of their meetings, regularly.—Burnside Foster, M. D., *St. Paul Medical Journal.*